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Investigation of endovenous laser ablation of varicose veins in vitro using 1.885-μm laser radiation

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Abstract

© 2016, Springer-Verlag London.This paper presents the results of endovenous laser ablation (EVLA) of varicose veins in vitro using radiation of a solid-state laser based on the crystal LiYF4:Tm, with a wavelength of 1.885 μm and power output of around 3 W. An experimental series with saline solution and red blood cell (RBC) suspension in the venous lumen was performed to identify the impact of a heated carbonized layer precipitated on the fiber end face versus the efficiency of EVLA. Results of these experiments confirmed that the presence of a heated carbonized layer on the fiber end face increases the efficiency of EVLA.

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Keywords

Endovenous ablation, Histologic analysis, Laser radiation